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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,549	05/17/2002	Camille Borer	GK-BUE-103/500647.20004	7567

26418 7590 03/12/2003

REED SMITH, LLP
ATTN: PATENT RECORDS DEPARTMENT
599 LEXINGTON AVENUE, 29TH FLOOR
NEW YORK, NY 10022-7650

EXAMINER	
BOYKIN, TERRESSA M	

ART UNIT	PAPER NUMBER
1711	

DATE MAILED: 03/12/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,549	BORER ET AL.	
	Examiner	Art Unit	
	Terressa M. Boykin	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 May 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Abstract missing

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Abstract

Applicant is reminded of the proper language and format of an Abstract of the Disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. The printer will no longer accept Abstracts that are more than 25 lines, regardless of the number of words. The form and legal phraseology often used in patent claims, such as "means" and "said", should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

Claim 21 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the broadly defined crystallization step does not disclose a second crystallization step in the process.

35 USC 112, Second Paragraph

Claims 9-15, and 16 -27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 applicants' disclose:

"A process for manufacturing crystallizable plastic material comprising:

(a) *melting amorphous plastic material;*

(b) pelletizing the plastic material;

(c) crystallizing the plastic material; and

(d) post-condensing the plastic material;

wherein the plastic material is *not subjected to heating prior to the crystallization step* and the plastic material is subjected to sieving after the crystallization step."

Note that the above "*not subjected to heating prior to the crystallization step*" is unclear and inconsistent with the prior step (a) since the recited "*melting...*" is infact a heating step and is prior to the crystallizing step. Note also that claim 16 regarding "not warmed again" is unclear in view of the above.

Note that a process should at least recite clear,, active steps and any process parameters necessitated by the specification so that the claim will "clearly set out and circumscribe a particular area with a reasonable degree of precision and particularity, In re Moore, 169 USPQ 236, and make it clear what subject matter the claim encompasses, as well as make clear the subject matter from others would be precluded. In re Hammack 166 USPQ 204.

35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 4609721 in view of USP 4839969 see col. 1 lines 5-42, col. 2 lines 3-5, col. 4 line 16, col. 7 lines 53 through col. 8 line 68; DE 19919357 (see translation of abstract by Derwent 2000-680538 enclosed); or USP 6436322 see abstract, and col. 1 lines 5-23.

USP 4609721 discloses a process has now been developed for the production of a beverage bottle-grade polyethylene terephthalate *(from henceforth referred to as PET)* resin wherein a PET resin is prepared by melt polymerization under especially selected conditions which eliminate the need for a subsequent separate solid state polymerization step and which permit the molder to use typical air drying steps to upgrade the thus-produced PET chip for use in blow molding, thereby reducing the levels of moisture, acetaldehyde and acetaldehyde generation therein and increasing its

intrinsic viscosity to a level advantageous for molding beverage bottles. These air drying conditions are typically at a lower temperature and of shorter duration than solid state polymerization conditions. As noted above, the reference discloses an improved process is provided for producing *polyethylene terephthalate* chip having levels of acetaldehyde content, acetaldehyde generation rate and intrinsic viscosity suitable for the molding of beverage containers after being subjected to substantially normal air drying steps at a molding plant, comprising the steps of:

(a) introducing ethylene glycol and terephthalic acid to a reactor in a ratio of about 1.05 to about 1.35 moles ethylene glycol per mole terephthalic acid and an antimony catalyst in a concentration in the range of from about 325 to about 600 parts antimony per million parts by weight of the product polymer, and heating the resulting mixture at a temperature in the range of from about 240.degree. C. to about 260.degree. C. and a pressure in the range of from about 1 to about 5 atmospheres until the acid is at least about 95 percent esterified to form an esterified monomer mixture;

(b) *melt* polymerizing the antimony-containing monomer mixture of step (a) by *heating* it in at least two stages at progressively higher temperatures in the range of about 270.degree. C. to about 285.degree. C. and at a reduced pressure until it becomes a molten polymer having an intrinsic viscosity of at least about 0.64 deciliters/gram;

(c) extruding the molten polymer of step (b) into a water bath for quenching, then *pelletizing* the quenched polymer so that its average individual chip volume is in the range of from about 2.3 to about 3.5 mm.sup.3 ; and

(d) *crystallizing the polymer pellets by heating* in air or an inert atmosphere with agitation at a temperature in the range of from about 110.degree. C. to about 160.degree. C. for a time effective to produce a degree of crystallinity in the polymer in the range from about 10 percent to less than about 30 percent.

Consequently the reference discloses a process for manufacturing crystallizable plastic material specifically a polyester and more specifically a polyethylene terephthalate employing the same process steps a,b, and c and as claimed by applicants except for the step of post-condensing or after-condensing as also referred to as in the art. However, the prior art, USP 4839969 see col. 1 lines 5-42, col. 2 lines 3-5, col. 4 line 16, col. 7 lines 53 through col. 8 line 68; DE 19919357 (see translation of abstract by Derwent 2000-680538 enclosed); or USP 6436322 see abstract, and col. 1 lines 5-23 disclose the widely known further step of post-condensing as common processing step of manufacturing PET to make compositions and articles from PET pellets, granules etc. Note:

US **4839969** relates to a drying method and apparatus, and more particularly, to a method and apparatus for use in drying polymers. One aspect of the invention

particularly relates to a method and apparatus for drying crystalline polymers such as polyethylene terephthalate pellets or granules. Another aspect of the invention relates to a method and apparatus for aftercondensing polycondensed polymers such as polyesters and polyamides. Note col. 1, lines 5-14, Note that the apparatus or drier is especially suitable for drying crystalline polymers such as PET in palletized or granular form and for after condensing polycondensed polymers such as polyesters and polyamides because the drier enables such polymers to be dried in much shorter times than the 5 hrs. previously required in the art.

Note that the reference states that drying is often required in order to satisfactorily prepare *amorphous* or *crystalline* polymers *for subsequent molding or extrusion* operations. For example, polyethylene terephthalate (PET) pellets used in molding carbonated beverage bottles is typically dried prior to injection molding the parisons from which the bottles are later blown. See col. 1 lines 36-42.

DE 19919357 disclose the thermal treatment of high molecular weight polyethylene terephthalate by converting into film, crystallizing and post-condensing.

USP 6436322 relates to a method for recycling polyethylene terephthalate (PET) flakes, characterized in that the flakes are extruded and granulated under vacuum, after which the granulate is aftercondensed in a solid phase under vacuum. The reference states that "Extrusion is preferably carried out in differentiated vent zones and aftercondensation of the solid phase is dependent on temperature, vacuum and time spent in a tumble dryer. Said dryer ensures the even and careful mixing and constant viscosity of the PET product. Said method is used in particular for making PET beverage bottles. Note that the reference clearly states that PET products are widely used, as beverage bottles, for high-grade sheet and fibers, and in medical supplies, especially syringes."

Consequently, since it is widely known that the polymer PET either in pellet form or granule form etc. may be further post or after-condensed to produce various articles or desired products, it would have been obvious to one having ordinary skill in the art at the time the invention was made in view of any one of the prior art above to further employ the (d) post-condensation step as claimed by applicants to the pelletized PET of the reference USP USP 4609721 which contains steps a, b and c, as claimed by applicants in order to produce the desired final product or article produced therefrom such as bottles, containers etc.

Correspondence

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Terressa Boykin, via the receptionist whose telephone number is (703) 308-2351. The examiner can

normally be reached on Monday through Friday from 8:00a.m.-5:30 p.m.

tmb

Terressa Boykin

Examiner Terressa Boykin
Primary Examiner
Art Unit 1711